273 Low fat free mass index is a risk factor for hospitalization in adult patients with cystic fibrosis

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Background: Fat free mass (FFM) depletion is reported in cystic fibrosis (CF) patients and is not detected by BMI.
Objectives: To investigate the association between whole or regional body composition indices and hospitalization or pulmonary function in adult CF patients.
Methods: A historical cohort study was carried out. Data of DXA scans performed between January 2007 and June 2012 in 85 adults with CF (44 males, mean age 23±4 years) were collected. Whole body, arm, leg and trunk FFM were divided by height squared to obtain FFM index (FFMI). The decline of FEV1 and the number and days of hospitalization per year was computed from time of DXA scan to end of follow-up. Results were adjusted for age, pancreatic function, diabetes and lung infections.
Results: Median follow-up was 2 years (IQR: 1–2.5 years). Patients with low whole body or limbs FFMI had higher risk of spending more than 14 days per year in hospital compared to patients with normal FFMI (adjusted OR: whole body 3.91, 95%CI 1.05–14.52, $P = 0.042$; arm 3.55, 95%CI 1.11–11.31, $P = 0.032$; leg 3.87, 95%CI 1.19; 12.57, $P = 0.024$). Whole body, arm and leg FFMI positively correlated with FEV1 at time of DXA scan ($r = 0.55$, $P < 0.0001$; $r = 0.40$, $P < 0.05$ and $r = 0.55$, $P < 0.0001$). No association was observed between relative rate of FEV1 decline and body composition indices.
Conclusions: In adult patients with CF, low whole body and limbs FFMI, derived from DXA body composition analysis, are associated with more time spent in hospital. The gender dependent relationship between whole body or limbs FFMI and pulmonary function, needs to be further investigated.

274 Do childhood eating habits in cystic fibrosis influence future behaviour and outcomes?

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Background: Strategies to improve food intake may be important in CF patients, who have an increased nutritional need due to their high metabolic rate and poor absorptive ability. We postulated that structured eating habits during childhood may influence adult eating, and to look at this we surveyed patients in our large adult clinic.
Method: Eating habits during childhood and teenage years, divided into "structured" (family eating together formally, regular meals throughout the day) or "unstructured" (high proportion of intake from snacks, 'eats when hungry', few formal family meals) were explored and the results correlated with current nutritional state and lung function.
Results: 48 patients (mean age 26 [range 17–46], 21 female) were surveyed. Those with structured eating habits (33) had better spirometry than the remainder (FEV_1 % predicted: mean 67.4 (SD 25.3) versus 51.9 (21.6); $p = 0.047$), and a trend towards a better nutritional state (BMI: mean 21.9 (3.1) versus 19.9 (3.5) respectively; $p = 0.062$). Mean age was similar (27.1 versus 24.8, $p = 0.32$). Of those children that ate formally in the evening, a higher proportion also ate breakfast regularly as teenagers (84% versus 53%, $p = 0.03$). Appropriate eating behaviour in childhood often continued into adult life although many experienced difficulties adapting to leaving home, starting work or going to university.
Conclusion: Nutritional status plays a vital role in preserving lung function. Establishing appropriate structured eating regimes in childhood provides the best basis to optimise nutrition in adult life when patients have competing pressures and responsibility is taken by the individual.

275 Eating habits and nutritional intervention in CF adolescents

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CF patients need specific nutritional recommendations to maintain/achieve adequate growth in presence of an energy consuming disease. Understanding eating habits in adolescents with CF may be useful when approaching and treating this challenging issue. We planned a study focused on eating habits, knowledge of nutritional recommendations and the factors that may contribute to non adherence behaviours. A group of 104 CF patients (51 males), aged 10–17 years, diagnosed by neonatal screening, were contacted and interviewed by a dietician. Different questionnaires were also administered: a modified version of Health Behaviour in School-age Children, Body Shape Questionnaire and CFQ-R to evaluate quality of life. When eating disturbances emerged, a further specific psychological intervention was provided. Pancreatic insufficiency and diabetes were present in 80% and 6% of the patients, respectively. 46% of patients had normal nutritional status (BMI percentile $>50^{th}$), 35% were $<25^{th}$ percentile and 14% were $<10^{th}$ percentile. The height percentile was $>50^{th}$ in 38% of the cases, $<25^{th}$ in 33% and $<10^{th}$ in 18%. The lowest indexes of nutritional status were showed among 10–12 y group in females and among 13–15 y group in males.
As a group, CF adolescents showed lack of understanding regarding the role of eating attitudes particularly in younger males, high pressure to eat from parents and conflict dietary intake at meals. The eating habits were similar to those of their healthy peers: low fat diet, high consume of soft drinks, skipping breakfast and low intake of vegetables, fruits and fluid. The study evidenced the necessity to improve the adolescents acknowledge of their specific nutritional needs.

276 Nutritional controversies in adult cystic fibrosis (CF) care – Results of a survey by European CF Nutrition Group

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Objectives: Correct nutritional managment is fundamenatal to CF. Use of oral nutritional supplements (ONS) and tube feeding (TF) remain controversial due to scarcity of randomised control trials. Overnutrition and obesity although historically given little attention in the context of CF are now emerging concerns. Our aim was to describe the prevalence of these 3 key nutritional aspects.
Methods: A questionnaire was developed by the European Cystic Fibrosis Nutrition Group (ECFNG). This was circulated to all members of the group via an email. Collection took place over a 6 month period (February-August 2012). Data was provided on the responder's clinic population looking at % prevalence of: ONS use, TF and overweight status (defined as BMI >91st centile).
Results: 63 emails were sent out. A total of 39 dietitians responded who combined were responsible for a total of 7098 patients (4928 adult, 2170 paediatric). 7 countries were represented providing adult data with 25 Dietitian responses: 16 UK ($n = 3760$), 3 Belgium ($n = 207$), 2 Netherlands ($n = 230$), 1 Denmark ($n = 71$), 1 Canada ($n = 300$), 1 Australia ($n = 310$) and 1 Sweden ($n = 50$). Not all responders were able to give results for every section. Medians were used as histograms indicated uneven data distribution for several categories. Medians for the full representative data ($n = 4928$) were 32.6% use of ONS (range 18–85%), 9% TF (range 0.3–30%) and 5.7% overweight (range 0–21%).
Conclusion: Wide ranges of prevalence of all 3 aspects exist. This is the first study by ECFNG comparing and reporting topical dietetic issues. It provides a collaborative overview of practice within the group and is an encouraging foundation for future work.